

APRIL/MAY 2024

**CMB53 — FOOD MICROBIOLOGY**

Time : Three hours

Maximum : 75 marks

**SECTION A — (10 × 2 = 20 marks)**

Answer ALL questions.

1. Define water activity ( $A_w$ ) and add a note on its role in microbial growth in food.
2. How does the nutrient content of food influence microbial growth?
3. What are the causes of spoilage in canned foods?
4. Define biodeterioration.
5. Define the term asepsis
6. What are the advantages and disadvantages of food irradiation?
7. List two health benefits associated with consuming fermented foods.
8. What are starter cultures in fermentation?
9. Differentiate between foodborne infection and foodborne intoxication.
10. Expand HACCP.





SECTION B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) Discuss about the role of bacteria in food spoilage.

Or

- (b) Summarize the effect of pH on the growth of different types of microorganisms.

12. (a) Summarize the role of psychrotrophic bacteria in milk spoilage.

Or

- (b) Outline the spoilage of fruits by molds.

13. (a) Explain the mechanism of food preservation by drying with specific examples.

Or

- (b) Elaborate the role of chemical preservatives in food spoilage control.

14. (a) Discuss the process of sauerkraut fermentation and the microorganisms involved.

Or

- (b) Explain the production of yogurt and its health benefits.

15. (a) Discuss the role of mycotoxins in foodborne illness.

Or

- (b) Apply and explain the steps involved in investigating a food poisoning outbreak.

SECTION C — (3 × 10 = 30 marks)

Answer ALL questions for 10 marks.

16. Elaborate note on factors affecting the growth of microorganisms in food.

17. Explain about the spoilage of meat and meat products by different microorganisms and their control strategies.

18. Discuss about the uses of low-temperature preservation methods on microbial growth in food.

19. Elaborate note on the health benefits and safety considerations associated with consuming fermented foods.

20. Outline the importance of food quality control measures in detail.

